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Mr. McCrory spent the week of October 12 in Florida with a committee appointed by the Secretary consisting of S. H. McCrory, chairman, R. V. Allison, Soil Conservation Service; John R. Magness, Bureau of Plant Industry; W. E. Hearn, Bureau of Chemistry and Soils; and E. H. Wiecking, Bureau of Agricultural Economics, studying the problems involved in the prevention of fire and the conservation of peat and muck soils in the southern part of Florida. This problem is intimately tied up with the problem of water control in the area south of Lake Okeechobee. Dr. Wilmon Newell, Director of the Florida Agricultural Experiment Station also accompanied the party. B.S. Clayton of the Division of Drainage accompanied Mr. McCrory on a portion of this trip.

A. T. Holman who was formerly with this Bureau in charge of the experimental soil erosion farm at Bethany, Mo., and who has lately been with the Soil Conservation Service, returned to the Bureau, effective September 16. Mr. Holman will be in charge of the Farm Operating Efficiency project with headquarters in Washington. George R. Shier resigned, effective October 10, to accept a position with the Agricultural Engineering Division of Ohio University.

On October 19 Lewis A. Jones left for an inspection of the CCC drainage work in Louisiana.

B.S. Clayton has returned to his headquarters at Belle Glade, Florida, after having spent two weeks in the Washington Office in connection with the preparation of a progress report on his work in Florida.

Charles C. Bell is acting District Engineer in charge of CCC drainage camps in Louisiana during the absence of B.O. Childs from duty for a major operation. It is expected that Mr. Childs will report back for active duty about November 1.

The following work accomplishments are reported by the Central District Drainage Camps for September: 1,837,719 cubic yards excavation and embankment, using 31,036 man days, 5,447,966 square yards of clearing, using 34,425 man days, 7 miles of tile line reconditioning using 4,260 man days, and 12,249 man days on miscellaneous work, such as outlet structures, seeding of levees, surveys, etc. The estimated commercial value of work performed by the close of September is \$4,633,000.

During September a three-day drainage conference for superintendents and engineers of the Missouri camps was held in cooperation with the Missouri College of Agriculture. Sessions were also attended by Army officials of the Missouri-Kansas CCC District, interested drainage officials, members of the faculty and student body of the College. The meeting convened at the Carrollton, Mo. camp on September 26 and at Mumford Hall on the Missouri

University Campus at Columbia on September 27 and 28. John G. Sutton, District Engineer and Clark E. Jacoby, Mo. Inspector, outlined the program of the drainage camps in addresses to the group. Other addresses and papers on various phases of drainage work were presented.

Mechanical cotton pickers are still operating in the Delta areas, that of the International Harvester Company being located near Clarksdale, while the Rust Brothers have one at Cloyer Hill, Miss. and one at Stoneville, Miss.

Messrs. Hopkins, R. L. Horne, and Eugene McKibben visited the cotton ginning laboratory during the early part of October to observe the cotton picker.

The exhibit of the cotton ginning laboratory that was on display at the Mid-South Fair, Memphis, during the week of September 14 to 19, was also on display at the fair held at Birmingham, Ala., during the period September 28 to October 3.

John W. Randolph was at the cotton ginning laboratory during the week of September 28 to October 3 obtaining several carloads of soil from the Stoneville station for the tillage machinery laboratory at Auburn.

The cotton ginning laboratory has just developed an aluminum gin with 10 6-inch saws, for plant breeders and geneticists. The gin is almost small enough to be placed in an ordinary suitcase, and it is expected that one of the gins will be exhibited at the 1937 International Cotton Congress in Egypt. The shops have made a number of small roller gins for the Bureau of Plant Industry, in cooperation with J. S. Townsend of the Bureau but this is the first laboratory size miniature saw gin that has been turned out.

On October 15 the cotton ginning and fiber laboratories were visited by a delegation of 30 high school and junior college principals who gathered from all parts of Mississippi to attend a special convention in the Delta.

After attending the conference of the International Commission on Snow at Edinburgh, Scotland, W. W. McLaughlin visited Denmark, Sweden, Holland, and Germany. He is now returning to the United States and will be in Washington the week of October 26.

Investigation was made by M. R. Lewis of a proposed 8,000 acre irrigation pumping project on the Missouri River between Bismarck and Washburn, N. Dak., and a preliminary report, with tentative estimate of cost was prepared. Mr. Lewis also made a topographic map and design of an irrigation system for the major part of a farm near Sabin, Clay County, Minn., where some 75 or 80 acres of potatoes have been irrigated during the past season and plans are being made to extend the irrigation system to cover several hundred acres to be planted to sugar beets and potatoes next year. Potato growing in that vicinity is a new venture, and if found practical, that crop may be grown extensively in future.

On the Rio Grande investigation for the National Resources Committee, a preliminary confidential progress report on consumptive use of water in the Upper Rio Grande Valley was completed by H. F. Blaney and O. W. Israelsen. Material was collected by R. B. Elmes for a statement on the history of irrigation in San Luis Valley. Under the supervision of Carl Rohwer, mapping of vegetative areas was continued, about 350,000 acres being mapped during the month, mostly in Costilla County, Colo. In the Middle Rio Grande Valley, New Mexico, soil sampling was continued on experimental plots of alfalfa, deciduous trees, and vineyards near Albuquerque for the purpose of determining the consumptive use of water. Specific gravity and volume weight

determinations were made of soil samples taken in the Albuquerque and Socorro areas. Observations of evaporation were carried on in cooperation with the U. S. Weather Bureau and the Middle Rio Grande Conservancy District. Similar studies were carried on in Mesilla Valley. A revised tabulation of acreages in the Rio Grande Project, for the period 1920 to 1935, inclusive, was furnished by the Bureau of Reclamation, El Paso office. Under the direction of Fred C. Scobey, maps are being prepared for publication as field data are received.

Establishment of snow courses in connection with the irrigation water-supply forecasting project was continued, and practically completed. To date 130 courses have been established in the Columbia River Basin by J. C. Marr, L. T. Jessup, and R. A. Work, including some established in 1935. Mr. Marr assisted cooperators in perfecting and augmenting the snow-course network in the Missouri River Basin, where for several years records of snow storage have been kept by the U. S. Geological Survey in cooperation with the Army Engineers' Office at Kansas City. It was arranged that certain changes should be made in the snow courses in order that they may conform with the interstate program. R. L. Parshall inspected snow courses already established in Wyoming and locating additional ones. Seventeen snow courses on the Sevier and Virgin rivers and three courses on the headwaters of the Green and Bear rivers were mapped, marked and cleared under the direction of George D. Clyde, completing the establishment of snow courses in Utah for the present season. Carl Rohwer conferred with representatives of the Soil Conservation Service, U. S. Weather Bureau, Forest Service, and Geological Survey, also the State Engineer of New Mexico, relative to establishing snow courses in New Mexico. With the assistance of forest rangers, Mr. Rohwer also established some additional snow courses on the Conejos and Alamosa river watersheds in Colorado.

Experiments to measure differences in extraction of moisture when various portions of the root zone are irrigated, were conducted by Colin A. Taylor near Pomona, Calif. These are designed to yield evidence on the practical method of irrigation in alternate furrows.

R. B. Gray attended the annual convention of the Farm Equipment Institute in Chicago on October 7 and 8. He also attended the Southern Chemurgic Conference at Lafayette, La., October 15, 16, and 17. While in the South, Mr. Gray visited the Farm Tillage Machinery Laboratory, Auburn, Alabama.

Considerable interest is being shown by manufacturers and cotton planters in the development of mechanical cotton pickers. W. R. Humphries is assisting Charles A. Bennett in making field tests of the Rust Brothers' cotton picker at Stoneville, Miss.

W. H. Redit recently spent two weeks at the Great Lakes Exposition, Cleveland, Ohio in charge of the Department exhibit. While in Cleveland, Mr. Redit visited the factory of the Cleveland Tractor Co., manufacturers of tracklaying tractors of the Diesel and gas burning types and that of the Root Co., manufacturers of fertilizer distributors and dusters.

A. H. Graves of the Toledo office conferred with officials of several implement manufacturers regarding the use of self-aligning disk jointers.

On October 6 R. M. Merrill visited State College, Pa., where he conferred with Dr. Nixon concerning vapor-spray investigations and with Mr. Clyde regarding plow-attachment test work. Mr. Merrill also spent several days at Washington in connection with the investigations on pest control.

The 1936 cotton crop from plots on the Prattville, (Ala.) Field is showing wide variations in yields and staple characteristics according to J. W. Randolph. However, a season of extreme moisture variations has cut all yields. Methods of tillage which produce favorable soil structures again produced the highest yields and highest quality.

A recording unit with three pens has been constructed for the plow test unit at the Farm Tillage Machinery Laboratory, Auburn, Ala. The chart of this unit is simultaneously driven with the power car dynamometer chart. The two units give a graphic record of time-distance and the force reaction on the plow by six pressure cells. A special sub-soil fitting unit having a series of plow shovels has also been constructed at Auburn and mounted on a utility car for use in conditioning the soil in the plots at sufficient depths, to eliminate any soil variations due to formation of a plow sole.

E.M. Mervine is continuing the sugar beet harvester tests in Colorado. The harvester is operated by one man on the machine and is pulled by a tractor. This crew of two men is delivering beets as fast as an average crew of twelve field laborers. No mechanical difficulties have developed under prevailing crop and field conditions in Colorado. The beets are trucked to the factory without any additional hand trimming. The tare is approximately the same as for the hand harvested beets.

E. M. Dieffenbach has completed the experimental details of an inexpensive device for use in reading the 35 mm. film copies of scientific articles available from our Department Library. Mr. Dieffenbach is now constructing a demonstration model.

Wallace Ashby, T. A. H. Miller and A. D. Edgar attended the meeting of the North Atlantic section of A.S.A.E. at Skytop, Pa., where Mr. Edgar presented a paper on his investigation of potato storage in Maine. Mr. Miller and Mr. Ashby consulted with extension agricultural engineers from the Northeastern States regarding completion of the plan book and working drawings for the Northeast Plan Exchange.

A study of apple storage in Virginia in cooperation with the Virginia Polytechnic Institute has been begun by M.A.R. Kelley. Work on wheat storage in Kansas has been completed by A. D. Edgar.

After spending several weeks on the potato storage studies in Maine, Mr. Edgar returned to Washington where he will work this winter.

Thayer Cleaver has completed work on wheat storage at Urbana, Illinois, for the season and is now engaged in a study of corn storage in cooperation with the University of Illinois.

Work at College Park, Md., on wheat storage has been completed by B. M. Stahl who is preparing a report on the whole wheat storage project.

Homer Witzel has been appointed as agent, engineering assistant, to assist Max J. LaRock in the farmhouse studies in Wisconsin.

A preliminary study of the absorption of solar heat in the experimental house at Athens, Georgia has been completed by J. W. Simons and Frank Lanham.

W. V. Hukill has been appointed Assistant to the Chief of the Division of Structures.

Publications issued:

"Flow of Water Around 180-Degree Bends". Technical Bulletin 526.